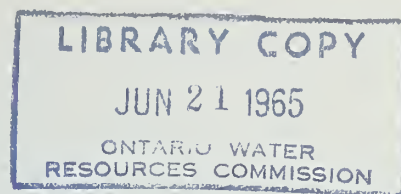




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CONISTON

SEWAGE TREATMENT PLANT

ANNUAL REPORT

1960

PREPARED BY

THE DIVISION OF PLANT OPERATIONS

ONTARIO WATER RESOURCES COMMISSION

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CONSISTON SEWAGE TREATMENT PLANT

INTRODUCTION

On May 10, 1957, the Solicitor for the Town of Coniston, approached the Ontario Water Resources Commission regarding the procedure for making a formal application to finance part of its new sewerage project. It was on the 12th of June, 1957, that the Ontario Water Resources Commission issued its certificate of approval for the construction of five sewage pumping stations, sanitary sewers, and an activated sludge sewage treatment plant discharging the effluent into Coniston Creek. The construction contract for this project was awarded to Carrington Construction Company Limited at a total cost of \$413,370.94. The treatment plant was put into operation on December 5, 1958.

DESIGN DATA

The designed dry weather flow for this plant is 260,000 gallons per day or for a population of 2600 persons at 100 gallons per capita per day. Very heavy flows have been received at the plant in the spring of the year. Actual flows are not available because no metering equipment is incorporated in the plant. It is hoped to install metering equipment into the plant this next year.

DESCRIPTION OF OPERATIONS

The sewage of the municipality is collected by a system of sanitary sewers that has four sewage ejectors incorporated in it to lift the sewage sufficiently to cause it to flow to an underground pumping station near the sewage treatment plant. The sewage is pumped from this main pumping station to the influent works of the plant.

Screening is provided at the plant to remove rags, sticks and other items that may be detrimental to the operation of pumps. The bar screen is located on the top of the grit chamber with the sewage passing verti-

cally through it.

From the grit chamber the sewage enters the primary clarifier where it is retained for approximately three hours and then passes on to the aeration tanks. During the detention time in the primary clarifier the solids settle to the bottom of the tank and are pumped to the digester.

In the aeration tank, the primary clarifier effluent is mixed with activated sludge returned from the final clarifier called mixed liquor and aerated by an Ames Crosta Mills high intensity aerating cone for approximately nine hours. When the mixed liquor is aerated for a period of time, the suspended particles, colloidal particles and dissolved material will coalesce to form a light feathery flock which settles slowly under quiescent conditions. The clear liquid from this process is separated by settling in the secondary clarifier while the settled sludge is pumped back into the aeration tank.

The sewage treatment plant effluent is disinfected with chlorine before being discharged into Coniston Creek.

The sludge that is settled in the primary clarifier is pumped to the primary digester. In the digester the sludge is kept at a temperature of 90° F and thoroughly agitated. The sludge is here broken down by bacterial action to a thick, black, odourless liquid which is discharged to the sludge drying beds. The digested sludge when run onto the drying beds dries quite readily in favourable weather conditions leaving a humus like material which is a good soil conditioner.

OPERATING DIFFICULTIES

Considerable operating difficulties were encountered when the project was initially put into operation. The first operator was asked to resign on July 31, 1959, for various reasons, and another operator was engaged. The new operator started work on Tuesday, September 1, 1959 and the opera-



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tion of the plant and lift stations seemed to steadily improve.

Numerous difficulties were encountered in the electrical system. Fuses were continually burning out or motors going on reset. It was suggested at that time that the installations should be re-wired or proper de-humidifiers incorporated. Since then, the operator has re-wired most of the electrical components and the electrical difficulties are at a minimum.

Present difficulties seem to stem from extraneous material found in the pumps or lodging in the seat of check valves. A local drive to advise local residents of the difficulties caused by this material would greatly reduce such trouble.

The pumping stations are operated at near capacity and equipment most severely tested, during heavy rains or spring thaw.

The completion of the office building has greatly aided the operator in his work. Steps are being taken to set up more laboratory facilities in helping the operator in the control of the treatment process.

EXPERIMENTATION

Alterations to pumping station No. 2 are well under way. Some increase in the capacity of the ejector has been reported by the operator although some difficulty is being experienced at the time of writing this report. Venting and the releasing of air from the ejector vessel after discharge is slow but can possibly be rectified. This project has been initiated by the operator.

PERSONNEL

H. J. LeClair is the chief operator at the sewage treatment plant. Mr. LeClair joined the Commission staff in September, 1959. His former occupation was electrician.

PERSONNEL - Continued

During the war he saw service with the Royal Canadian Navy as a radar technician. In the service he spent three years aboard the aircraft carrier Magnificent.

Mr. LeClair is married and has three children, Blanche 1, Lea 3 and Guy 2. He enjoys hunting, fishing and wood-working. He moved with his family from Eastview, Ontario to assume his position at the plant.

OPERATING COSTS

The total cost of operation of the plant during the year 1960 was \$8,797.25 or \$3.42 per person. The operating cost is somewhat less than the estimate.

Estimated Cost for 1961

Payroll	\$5600
Fuel	525
Power	660
Chemicals	500
General Supplies	600
Equipment	300
M. & R.	160
*Miscellaneous	1260
Contingency	<u>145</u>
	\$ 9500

* Includes \$726.00 Insurance

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